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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,516	01/30/2002	Herbert F. Cattell	10010010-1	3692

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AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

MAHATAN, CHANNING

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,516

Applicant(s)

CATTELL, HERBERT F.

Examiner

Channing S Mahatan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1 Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

APPLICANT'S ARGUMENTS

Applicant's arguments, filed 13 July 2004, have been fully considered but they are not deemed to be persuasive. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

CLAIMS UNDER EXAMINATION

Claims herein under examination are claims 1-38.

Claims Rejected Under 35 U.S.C. § 103

The rejection of claims 1-38 under 35 U.S.C. § 103(a) as being unpatentable over Ermolaeva et al.; taken in view of Bowtell; further in view of Affymetrix® 428™ Array Scanner or GenePix™ Pro Array Analysis Software/GenePix™ 4000B Array Scanner are maintained for reasons of record.

Applicant argues: 1) none of the cited references discusses the idea that array scanning and feature extraction could be automated, or that array reading and feature extraction occurs at the same time; and 2) taken together or in combination, none of the cited references even recognizes a problem that could be solved by automation, or by reading and extracting features at the same time; and 3) none of the references disclose automating signal data retrieval and feature extraction from arrays at a plurality of reading stations, or from stations that are connected to a hub. Applicant's arguments are found unpersuasive and clarification is provided for below.

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Applicant is directed to M.P.E.P. § 2143 for the “Basic Requirements of a Prima Facie Case of Obviousness” that was utilized by the Examiner in applying a prima facie case of obviousness of the cited prior art:

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

First, regarding the suggestion or motivation to combine reference teachings: 1) Bowtell references Ermolaeva et al. for the teaching of array data management systems (page 32, right column, lines 28-31, and cited reference 31); and 2) Bowtell reviews the specifications of several readers/scanners and software for microarray analysis (i.e. Affymetrix, etc. page 31-32, beginning on the right column, line 6, and Table 5). Additionally, it should be noted Table 5 indicates a scanner (Genomic Solutions GeneTAC 1000) with “automatic processing up to 24 slides per run”.

Second, one of ordinary skill in the art would have reasonable expectation of success when combining these references that would result in multiple chemical arrays being read/scanned either in serial or in parallel, saving the such information (i.e. signal data) in memory (i.e. temporary storage disk), transferring the saved information into the array database, retrieving the information from said array database (via a network/web interface), and extracting feature characteristics from the information while another array is read/scanned (i.e. serial or in parallel). The reasonable expectation of success would appear through the automation/continuous extraction of feature characteristics while another array is read/scanned,

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since such automation/continuous processing would reduced the “waiting time” between reading/scanning multiple arrays, wherein:

M.P.E.P. § 2144.01 Implicit Disclosure

“[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968)

M.P.E.P. § 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale

As discussed in M.P.E.P. § 2144, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.

II. ELIMINATION OF A STEP OR AN ELEMENT AND ITS FUNCTION

A. Omission of an Element and Its Function Is Obvious If the Function of the Element Is Not Desired Ex parte Wu , 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989)

For instance, it would be obvious to one of ordinary skill in the art to eliminate the “waiting time” in processing more than one microarray (i.e. reduce the processing time of multiple arrays individually in the same common reader/scanner or multiple readers/scanners networked via a hub), rather “waiting” for the signal data from each microarray to be read/scanned, storing the signal data, retrieving the signal data, extracting features from the signal data, and then repeat the process for each microarray after the extraction of features is complete.

Finally, the prior references when combined teach and/or suggest the claim limitations which would result in a reasonable expectation of success:

Ermolaeva et al. is herein applied from the previous office action. Ermolaeva et al. describes a microarray data management and analysis system (i.e. hub), wherein a relational database was designed to allow for flexibility in data input and the generation reports through a

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web-browser interface (Abstract; page 20, left column, lines 9-12; and page 23, left column, lines 31-36).

Bowtell reviews the specifications of several specific readers/scanners and software provided for analysis of microarrays (pages 31-32, beginning on the right column, line 6; and Table 5).

The Affymetrix® 428™ Array Scanner established that array readers/scanners, at the time of the invention, contain computer processors and data storage memory devices.

The GenePix™ Pro Array Analysis Software/GenePix™ 4000B Array Scanner established that array readers/scanners, at the time of the invention, contain computer processors and the provided software for the extraction of feature characteristics from arrays.

With respect to Applicant's arguments regarding "automated"/"automation" it appears Applicant believe that, for example, array scanning and feature extraction are performed separately by manual activation (i.e. manual activation of scanning followed by manual activation of feature extraction). Applicant is directed to:

M.P.E.P. § 2144.04 Automating a Manual Activity

In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)... The court held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art.).

The replacement of, for example, the manual activation of scanning followed by the manual activation of feature extraction would accomplish the same result if "automated", and therefore, is not sufficient to distinguish over the prior art.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the invention to practice Ermolaeva et al. array data management system; in view of Bowtell array readers/scanners and analysis software; further in view of Affymetrix®

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428™ Array Scanner or GenePix™ Pro Array Analysis Software/GenePix™ 4000B

Array Scanner such that multiple chemical arrays from multiple array readers/scanners are read/scanned either in serial or in parallel, saving the raw image file (i.e. signal data) in memory (i.e. temporary storage disk), transferring the raw image files into the array database, retrieving raw image file(s) from said array database (via a network/web interface) thereby extracting feature characteristics while another array is read/scanned (i.e. serial).

ACTION IS FINAL

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R. § 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

EXAMINER INFORMATION

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the

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Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 C.F.R. § 1.6(d)). The CM1 Fax Center number is either (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Channing S. Mahatan whose telephone number is (571) 272-0717. The Examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Woodward, Ph.D., can be reached on (571) 272-0722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify Applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also

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enables Applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Date:

September 27, 2004

Examiner Initials:

CSM

Marianne P. Allen
MARIANNE P. ALLEN
PRIMARY EXAMINER

9/29/04

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